What is claimed is:

- 1. A functional bead comprising a coating layer on the surface thereof and having nanoparticles present in the coating layer.
- 2. The functional bead according to claim 1, wherein the bead is a bead made of a material selected from the group consisting of glass, silica gel, polystyrene, polypropylene, membrane, and magnetic material.
- 3. The functional bead according to claim 1, wherein the coating layer is produced by a dehydration condensation reaction of a metal alkoxide.
- 4. The functional bead according to claim 1, wherein the bead is plastic and the coating layer is produced by polymerizing a vinyl compound.
- 5. The functional bead according to claim 1, wherein the nanoparticle is a nanoparticle made of at least one material selected from the group consisting of metal, semiconductor, and metal compound.
- 6. A method for reading beads comprising the steps of:

introducing functional beads having a coating layer on the surface thereof and having nanoparticles present in the coating layer to a flow path;

enabling the functional beads to emit light with a wavelength specific to the nanoparticles by applying a voltage to the functional beads in the flow path; and identifying the functional beads based on the emission.

7. A bead reading apparatus comprising:

a flow path to enable functional beads having a coating layer on the surface thereof and having nanoparticles present in the coating layer to pass therethrough;

> a pair of electrodes provided in the midst of the flow path; a power source to apply a voltage to the electrodes; and

a light-receiving element to capture light emitted from the functional beads, to which the voltage has been applied by the electrodes.

- 8. The bead-reading apparatus according to claim 7, comprising a magnetic belt for passing the functional beads through the flow path by magnetic force.
- 9. A method for reading beads comprising the steps of:

introducing functional beads having a coating layer on the surface thereof and having nanoparticles present in the coating layer to a flow path;

enabling the functional beads to emit light with a wavelength specific to the nanoparticles by irradiating the functional beads with an electromagnetic wave in the flow path; and

identifying the functional beads based on the emission.

10. A bead-reading apparatus comprising:

a flow path to enable functional beads having a coating layer on the surface thereof and having nanoparticles present in the coating layer to pass therethrough;

an electromagnetic wave source provided in the midst of the flow path; and

- a light-receiving element to capture light emitted from the functional beads, which have been irradiated with the electromagnetic wave.
- 11. The bead-reading apparatus according to claim 9, comprising a magnetic belt for passing the functional beads through the flow path by magnetic force.
- 12. A functional bead comprising a coating layer on the surface thereof and having nanoparticles present in the coating layer, wherein a biopolymer is fixed on the surface of the functional bead.
- 13. A method for reading functional beads comprising the steps of:

causing a specific reaction between a biopolymer of claim 11 and other

biopolymer in the presence of the functional beads of claim 12; and identifying the functional beads based on the specific reaction.

- 14. The functional bead-reading method according to claim 13, wherein the specific reaction is a hybridization reaction, a nucleic acid amplification reaction, or an antigenantibody reaction.
- 15. A flow cytometer comprising a bead-reading apparatus according to claim 7.
- 16. A flow cytometer comprising a bead-reading apparatus according to claim 10.